

Application No. 09/381,828

Art Unit 1743

Monday, September 22, 2003

Reply to Office Action of June 18, 2003

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in this application.

Listing of Claims:

1. (Previously Presented) A method for the characterisation of physical and/or chemical properties of a liquid, characterised in that,

1) at least one dependent physical and/or chemical property of a liquid is measured in a measuring cell as a function of temperature and a component concentration as independent variables,

2) the values for the component concentration in the measuring cell are determined by calculation, based on data from a control program for the change of component concentration in a computer and the temperatures are determined by calculation from a temperature control program or by measurements;

3) the value of the component concentration in the measuring cell is changed by adding in one step or gradually a predetermined amount of another liquid containing a different component concentration into the measuring cell according to the control program for the change of the component concentration, and a representative number of measurements of the dependent physical or chemical property are

Application No. 09/381,828

Art Unit 1743

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performed in the measuring cell within the whole selected temperature range within the predetermined change of the component concentration,

4) the procedures above are repeated at desired component concentrations and temperatures in order to obtain a wanted number of values;

5) the values obtained for the dependent properties are combined with the values for the independent properties to measuring points; and

6) the measuring points electronically stored in the computer are coordinated and visualised in a three-dimensional diagram.

2. (Currently Amended) A method according to Claim ~~4~~, 1, characterised in that, a series of measurements are done under rising temperature, and following series of measurements are done under decreasing temperatures and vice versa.

3. (Previously Presented) A method according to Claim 1, characterised in that, according to the control program for the change of the component concentration one portion of the liquid is removed from the measuring cell and the same volume of the another liquid containing a different concentration of the component is thereafter added to the measuring cell.

Application No. 09/381,828

Art Unit 1743

Monday, September 22, 2003

Reply to Office Action of June 18, 2003

4. (Previously Presented) A method according to Claim 1, characterised in that, the changes in concentration and/or the temperature are controlled by a program in the computer.

5. (Previously Presented) A method according to Claim 1, characterised in that, the temperature of each measuring point is measured simultaneously with the physical and/or chemical property.

6. (Previously Presented) A method according to Claim 1, characterised in that, the predetermined amount of the another liquid added to the liquid amends the concentration of the component in the liquid with 0.01-5 % by weight.

7. (Previously Presented) A device for the characterisation of the physical and/or chemical properties of a liquid, characterised in that, it comprises

a) a measuring cell (1) provided with

i) an equipment (2) for the homogenisation of a liquid,

ii) at least two control equipment (3, 17), which comprise or are attached to control programs for changing of the two independent variables, component concentration and temperature, in a predetermined manner, the control equipment (3) of the component

Application No. 09/381,828

Art Unit 1743

Monday, September 22, 2003

Reply to Office Action of June 18, 2003

concentration comprising a dosage organ for the addition of another liquid containing a different component concentration to the measuring cell,

iii) at least one measuring organ (9, 13, 14) for the determination of at least one dependent physical and/or chemical property of the liquid, and

iv) optionally a measuring organ (15) for the determination of the temperature,

b) at least one computer (5) for

i) the reception and storage of data relating to the dependent and independent variables via at least one electronic circuit (11', 12', 13', 14', 15') and the calculation of at least the component concentration from data obtained from the control program and

ii) compilation of the received and calculated values into three-dimensional measuring points and

c) equipment (16) for visualisation of the measuring points stored in the computer in a three-dimensional diagram.

8. (Original) A device according to Claim 7, characterised in that, the equipment for the control of the temperature of the fluid comprises a jacket (17) or a heating coil for the cooling and/or

Application No. 09/381,828

Art Unit 1743

Monday, September 22, 2003

Reply to Office Action of June 18, 2003

heating by means of a heat transfer medium, whereby cooling and heating is controlled by a program in the computer (5).

9. (Previously Presented) A device according to Claim 8, characterised in that the equipment (3) for the control of component concentration has one or several dosing organs for the withdrawal from and injection to the measuring cell of the same amount of the fluids but with different concentrations, whereby amounts are controlled by a program in the computer (5).

10. (Previously Presented) A device according to Claim 7, distinguished by the fact that control programs are included in the computer (5).
